Complete Summary

GUIDELINE TITLE

Eye.

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Eye. Corpus Christi (TX): Work Loss Data Institute; 2005. 39 p. [50 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Work Loss Data Institute. Eye. Corpus Christi (TX): Work Loss Data Institute; 2004. 39 p.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Work-related eye injuries

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Ophthalmology
Surgery

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Health Plans
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To offer evidence-based step-by-step decision protocols for the assessment and treatment of workers' compensation conditions

TARGET POPULATION

Workers with occupational eye injuries

INTERVENTIONS AND PRACTICES CONSIDERED

The following interventions/procedures were considered and recommended as indicated in the original guideline document:

1. Antibiotic therapy for acute bacterial conjunctivitis
2. Bandage contact lens
3. Calf blood extract eye gel
4. Diclofenac ophthalmic solution
5. Emergency eye wash products
6. Fibrin glue and N-butyl-2-cyanoacrylate for corneal perforations
7. Flurbiprofen eye drops
8. Indomethacin with or without gentamicin eye drops
9. Prophylactic intravitreal antibiotics
10. Protection methods for eyes under general anesthesia
11. Surgery for orbital floor fractures
12. Surgical treatment for hyphema
13. Tetanus toxoid
14. Topical corticosteroids for traumatic microhyphema
15. Topical nonsteroidal anti-inflammatory drops
16. Topical nonsteroidal anti-inflammatory drugs (NSAIDs)

The following interventions/procedures are under study and are not specifically recommended:

1. Activity restrictions/Work modification
2. Ophthalmic vasoconstrictor (drug products)
3. Management of traumatic optic neuropathy

4. Topical aminocaproic acid

The following interventions were considered, but are not recommended:

1. Computed tomography (CT)
2. Contact lens use following bilateral penetration keratoplasty (PK)
3. Erythromycin and sulfa compounds (for corneal abrasions involving contact lens use)
4. Patching as primary treatment
5. Surgery for optic neuropathy

MAJOR OUTCOMES CONSIDERED

Effectiveness of treatments of eye injuries

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ranking by quality within type of evidence:

a. High Quality
b. Medium Quality
c. Low Quality

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Initial Diagnosis

Eye injuries in the workplace are common and can be very serious, although when proper preventive techniques are practiced (such as personal protective equipment in an industrial setting and computer-related ergonomic training in an office environment), most injuries can be avoided. Eye complaints account for approximately 4% of workers' compensation claims.

Initial Evaluation

The most common initial complaints are of blurred vision, red eye, or visual fatigue. More serious conditions, such as corneal perforation or chemical splash, are usually directly incident-related and require immediate emergency attention or referral. Examination for red flags (signs or symptoms of a potentially serious condition) is the first step in any initial evaluation. Always check visual acuity, peripheral vision, and extra-ocular movements.

Presumptive Diagnosis and Initial Therapy

The patient may present with complaints of:

Red Eye: Red eye is often a sign of a subconjunctival hemorrhage, which will usually heal on its own. A corneal abrasion, foreign body, allergy, or dry eyes, all of which may also be indicated by an itching or burning of the eye, could also cause red eye.

Ask the patient,

- To explain the symptoms and how they are affecting his or her vision
- To explain any past history involving red eye or any other eye related problems, as well as any other medical problems such as diabetes or high blood pressure
- To indicate what triggered the onset of symptoms
- To explain what makes the problem worse or better

The eye should be tested for visual acuity, as well as examined with a penlight or transilluminator for irregularities of the corneal surface. Look for noticeable symptoms such as irregularity of the pupils, including uneven dilation or slow reactivity, and lid malfunction.

The following symptoms present with red eye should be considered red flags for immediate referral: severe pain, photophobia, reduced vision, colored halos around point of light in the patient's vision, ciliary flush, high intraocular pressure, corneal epithelial disruption, corneal opacity, proptosis, a smaller pupil in the problem eye, or shallow anterior chamber depth.

In the absence of red flags, contact lenses should be removed and the irritated eye may be treated with topical non-steroidal anti-inflammatory drugs, non-steroidal or non-prescription analgesics to relieve discomfort until symptoms resolve within 48 to 72 hours.

Blurred Vision: Blurred vision, whether central or peripheral, can last from a few seconds to over 24 hours to a lifetime of gradual loss.

Short term blurred vision that heals itself within a few hours could be the result of a migraine headache, transient ischemic attack (occurs when blood supply to the brain is interrupted), or papilledema (optic disc swelling secondary to high intracranial pressure).

Painless loss lasting over days or weeks could be the result of cataracts, vitreous hemorrhage, or retinal detachment, while painful loss could occur from acute angle-closure glaucoma, optic neuritis (pain with eye movements), uveitis, or corneal hydrops (keratoconus).

Long term, gradual change is most likely nearsightedness or farsightedness.

Unless the blurred vision appears to be a temporary result of too much intense close-up work (see visual fatigue), referral to a specialist is recommended.

Visual Fatigue: Visual fatigue usually occurs because of intensive use of the eyes, and is especially prevalent in visual display terminal workers. Rest breaks for the

eye are temporary solutions, but for long-term prevention and treatment, the cases should be managed with good visual ergonomics and proper vision care.

Surgery

Surgery is rarely a consideration for work-related eye complaints. In the absence of red flags, occupational physicians or primary care providers can safely treat most eye-related complaints. Most conservative treatment (such as non-steroidal anti-inflammatory ophthalmic drugs or non-prescription analgesics to relieve discomfort) for standard eye complaints including superficial foreign bodies, corneal abrasions, conjunctivitis, and ultraviolet radiation damage, will lead to healing within 48 to 72 hours. Return to modified work should be encouraged as the condition permits. If there is no sign of improvement after 48 to 72 hours, referral to a specialist is recommended.

Official Disability Guidelines (ODG) Return-To-Work Pathways - Open Wound of Eyeball

Modified work: 1 day

Regular work, loss of binocular-visual acuity, based on Department of Transportation (DOT) rules: 14 days

ODG Return-To-Work Pathways - Corneal Abrasion

Medical treatment not required: 0 days

With eye patch, modified work: 0 days

With eye patch, regular work: 1 day

ODG Return-To-Work Pathways - Corneal Ulcer

Medical treatment not required: 0 days

Simple, one eye: 1 day

Simple, two eyes: 6 days

Dendritic: 14 days

ODG Return-To-Work Pathways - Acute Conjunctivitis

Modified work: 0 days

Regular work: 1-2 days

ODG Return-To-Work Pathways - Other and Unspecified Conjunctivitis

0 days

Viral, until cleared: 5 days

ODG Return-To-Work Pathways - Superficial Injury of Eye

Medical treatment not required: 0 days

With eye patch: 1 day

ODG Return-To-Work Pathways - Contusion of Eye

Superficial contusions: 0 days

Injury to eyeball without associated intraocular injury: 10 days

ODG Return-To-Work Pathways - Nystagmus and Other Irregular Eye Movements

0 days

ODG Return-To-Work Pathways - Disorders of Vitreous Body

Without surgery: 0-1 days

Vitrectomy, clerical/modified work: 21 days

Vitrectomy, manual work: 56 days

ODG Return-To-Work Pathways - Myopia

With glasses or contacts: 0 days

With laser correction: 2 days

With radial keratotomy (RK): 3 days

ODG Return-To-Work Pathways - Astigmatism

0 days

ODG Return-To-Work Pathways - Strabismic Amblyopia/Blurred Vision

0 days

ODG Return-To-Work Pathways - Subjective Visual Disturbances

0 days

ODG Return-To-Work Pathways - Color Vision Deficiencies

0 days except for certain occupations (e.g., pilots, electricians, jewelers, artists)

ODG Return-To-Work Pathways - Foreign Body

Slit lamp removal of ocular foreign body: 0-1 days

ODG Return-To-Work Pathways - Dry Eye

0 days

(See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in the Procedure Summary of the original guideline document)

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines from the leading specialty societies.

The type of evidence associated with each recommended or considered intervention or procedure is ranked in the guideline's annotated reference summaries.

Ranking by Type of Evidence:

1. Systematic Review/Meta-Analysis
2. Controlled Trial-Randomized (RCT) or Controlled
3. Cohort Study-Prospective or Retrospective
4. Case Control Series
5. Unstructured Review
6. Nationally Recognized Treatment Guideline (from www.guideline.gov)
7. State Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

These guidelines unite evidence-based protocols for medical treatment with normative expectations for disability duration. They also bridge the interests of the many professional groups involved in diagnosing and treating work-related eye injuries.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 (revised 2005)

GUIDELINE DEVELOPER(S)

Work Loss Data Institute - Public For Profit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

AVAILABILITY OF COMPANION DOCUMENTS

Background information on the development of the Official Disability Guidelines of the Work Loss Data Institute is available from the Work Loss Data Institute Web site.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on April 4, 2005. This NGC summary was updated by ECRI on January 18, 2006.

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